

## Health Science

Are science classes your favorite?  
Do you enjoy helping people?  
Have you served as a volunteer in a hospital?

Do you follow instructions exactly?  
Can you work fast in an emergency?  
Do you take good notes in class?

*In the Health Science cluster you would promote health and wellness or diagnose and treat injuries and disease. You could work directly with people. Or you could work in laboratories to get information used in research or diagnosis. Health service employees go to work at a variety of different sites. Some work in hospitals, offices, or laboratories. Others work on cruise ships, at sports arenas, or within communities.*

### National Employment Outlook

Employment of medical and health services managers is expected to grow faster than average for all occupations through 2014, as the health care industry continues to expand and diversify. Job opportunities will be especially good in offices of health practitioners, general medical and surgical hospitals, home health care services, and outpatient care centers.

Job prospects are expected to be good for chiropractors and employment is expected to grow faster than average for all occupations through the year 2014 as consumer demand for alternative health care grows. Chiropractors are appealing to many health-conscious Americans as they emphasize the importance of healthy lifestyles and do not prescribe drugs or perform surgery.

Demand for dental care should grow substantially through 2014 as employment of dentists is projected to grow about as fast as average for all occupations. As members of the baby-boom generation advance into middle age, many will need complicated dental work. In addition, elderly people are more likely to retain their teeth than their predecessors, and will require more care. The younger generation will continue to need preventive checkups, which decreases the incidence of tooth decay.

Strong employment opportunities are expected for pharmacists over the 2004–14 period as they are expected to grow faster than the average particularly because of the growing elderly population and the number of people who use prescription drugs.

Job opportunities for registered nurses in all specialties are expected to be excellent as employment of registered nurses is expected to grow much faster than average for all occupations through 2014. Registered nurses are projected to create the second largest number of new jobs among all occupations and their much faster-than-average growth will be driven by technological advances in patient care, and an increasing emphasis on preventive care.














Employment of physical therapists is expected to grow much faster than the average for all occupations through 2014. Over the long run, the demand for physical therapists should continue to rise as growth in the number of individuals with disabilities or limited function spurs demand for therapy services.

Veterinarians are expected to increase as fast as average for all occupations over the 2004–14 projection period. Very good job opportunities are expected because the schools of veterinary medicine result in a limited number of yearly graduates and as pets are increasingly viewed as a member of the family owners will be more willing to spend more on veterinary care.












Employment of dental hygienists is expected to grow much faster than average for all occupations through 2014, ranking among the fastest growing occupations, in response to increasing demand for dental care and the greater utilization of hygienists to perform services previously performed by dentists.
















Occupation	Description	Hourly Wages	Outlook
<b>Master's Degree or higher</b>			
 <b>Dentists, General</b>	Diagnose and treat diseases, injuries, and malformations of teeth and gums and related oral structures. May treat diseases of nerve, pulp, and other dental tissues affecting vitality of teeth. May practice general dentistry or specialize in endodontics, periodontics, pedodontics, public health, or oral pathology.	Entry: \$42.48 Average: \$67.84 Experienced: \$80.52	
 <b>Pharmacists</b>	Dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medications and their use. May advise physicians and other health practitioners on the selection, dosage, interactions, and side effects of medications.	Entry: \$33.29 Average: \$40.50 Experienced: \$44.10	
 <b>Chiropractors</b>	Adjust spinal column and other articulations of the body to correct abnormalities of the human body believed to be caused by interference with the nervous system. Examine patient to determine nature and extent of disorder. Manipulate spine or other involved area.	Entry: \$16.42 Average: \$36.99 Experienced: \$47.28	
 <b>Veterinarians</b>	Diagnose and treat diseases and dysfunctions of animals. May engage in a particular function, such as research and development, consultation, administration, technical writing, sale or production of commercial products, or rendering of technical services to commercial firms or other organizations.	Entry: \$14.52 Average: \$29.71 Experienced: \$37.29	
<b>Bachelor's Degree</b>			
<b>Physician Assistants</b>	Provide healthcare services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment, and counsel patients. May, in some cases, prescribe medication.	Entry: \$27.84 Average: \$34.98 Experienced: \$38.55	
<b>Physical Therapists</b>	Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and decrease or prevent deformity of patients suffering from disease or injury.	Entry: \$22.54 Average: \$29.13 Experienced: \$32.43	
<b>Medical and Health Services Managers</b>	Plan, direct, or coordinate activities in such fields as life sciences, physical sciences, mathematics, statistics, and research and development in these fields.	Entry: \$21.13 Average: \$30.81 Experienced: \$35.64	
<b>Speech-Language Pathologists</b>	Assess and treat persons with speech, language, voice, and fluency disorders. May select alternative communication systems and teach their use. May perform research related to speech and language problems.	Entry: \$19.13 Average: \$25.50 Experienced: \$28.69	
<b>Medical and Clinical Laboratory Technologists</b>	Perform complex medical laboratory tests for diagnosis, treatment, and prevention of disease. May train or supervise staff.	Entry: \$17.52 Average: \$21.90 Experienced: \$24.09	



Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
<b>Dietitians and Nutritionists</b>	Plan and conduct food service or nutritional programs to assist in the promotion of health and control of disease.	Entry: \$12.51 Average: \$19.32 Experienced: \$22.72	
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Dental Hygienists</b>	Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop X-rays, or apply fluoride or sealants.	Entry: \$24.30 Average: \$28.53 Experienced: \$30.64	
 <b>Registered Nurses</b>	Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required.	Entry: \$17.57 Average: \$22.41 Experienced: \$24.82	
<b>Respiratory Therapists</b>	Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.	Entry: \$16.69 Average: \$20.38 Experienced: \$22.23	
 <b>Radiologic Technologists and Technicians</b>	Take X-rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes.	Entry: \$15.53 Average: \$19.86 Experienced: \$22.13	
<b>Licensed Practical and Licensed Vocational Nurses</b>	Care for ill, injured, convalescent, or disabled persons in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.	Entry: \$13.05 Average: \$15.99 Experienced: \$17.45	
 <b>Medical and Clinical Laboratory Technicians</b>	Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.	Entry: \$12.03 Average: \$16.24 Experienced: \$18.33	
<b>Medical Transcriptionists</b>	Use transcribing machines with headset and foot pedal to listen to recordings by physicians and other healthcare professionals dictating a variety of medical reports, such as emergency room visits, diagnostic imaging studies, operations, chart reviews, and final summaries. Transcribe dictated reports and translate medical jargon and abbreviations into their expanded forms.	Entry: \$10.87 Average: \$13.08 Experienced: \$14.18	





Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Medical Records and Health Information Technicians</b>	Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system. Process, maintain, compile, and report patient information for health requirements and standards.	Entry: \$9.23 Average: \$12.79 Experienced: \$14.58	
 <b>Emergency Medical Technicians and Paramedics</b>	Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.	Entry: \$8.44 Average: \$12.68 Experienced: \$14.79	
<b>Massage Therapists</b>	Massage customers for hygienic or remedial purposes.	Entry: \$8.23 Average: \$14.71 Experienced: \$17.93	
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Dental Assistants</b>	Assist dentist, set up patient and equipment, and keep records.	Entry: \$11.60 Average: \$14.66 Experienced: \$16.20	
 <b>Medical Assistants</b>	Perform administrative and certain clinical duties under the direction of physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician.	Entry: \$9.57 Average: \$12.29 Experienced: \$13.65	
<b>Pharmacy Technicians</b>	Prepare medications under the direction of a pharmacist. May measure, mix, count out, label, and record amounts and dosages of medications.	Entry: \$9.40 Average: \$14.47 Experienced: \$17.00	
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
 <b>Nursing Aides, Orderlies, and Attendants</b>	Provide basic patient care under direction of nursing staff. Perform duties, such as feed, bathe, dress, groom, move patients, or change linens.	Entry: \$9.21 Average: \$10.82 Experienced: \$11.64	
<b>Home Health Aides</b>	Provide routine, personal healthcare, such as bathing, dressing, or grooming, to elderly, convalescent, or disabled persons in the home of patients or in a residential care facility.	Entry: \$7.64 Average: \$9.47 Experienced: \$10.39	





## Hospitality and Tourism

Can you talk easily with all kinds of people?  
Do you participate in athletic activities?  
Do you enjoy travel?

Have you worked in a restaurant?  
Do you like to cook?  
Do you like to plan family recreational activities?

*In the Hospitality and Tourism cluster, you could work in a restaurant, hotel, sports arena, or travel agency. You might manage operations of a college cafeteria. Or you might guide high school students on a trip to Spain. Or you might rent equipment at a recreation center.*

### National Employment Outlook



Employment of lodging managers is expected to grow about as fast as the average for all occupations through 2014. Renewed business travel and domestic and foreign tourism will drive employment growth of lodging managers in full-service hotels.

Job openings for chefs, cooks, and food preparation workers are expected to be plentiful through 2014; however, competition should be keen for jobs in the top kitchens of higher end restaurants. Overall employment of chefs, cooks, and food preparation workers is expected to increase about as fast as the average for all occupations over the 2004-14 period. Employment growth will be spurred by increases in population, household income, and leisure time that will allow people to dine out and take vacations. In addition, the large number of two-income households will lead more families to opt for the convenience of dining out.














Job openings are expected to be abundant for food and beverage serving and related workers. Overall employment of these workers including

combined food preparation and serving workers is expected to increase as fast as the average over the 2004-14 period as population, personal incomes, and employment expand. Average employment growth is expected for waiters and waitresses and hosts and hostesses because increases in the number of families and the more affluent, 55-and-older population will result in more restaurants that offer table service and more varied menus. Employment of bartenders, dining room attendants, and dishwashers will grow more slowly than other food and beverage serving and related workers because diners increasingly are eating at more casual dining spots.

Competition will remain keen for the limited number of career positions as recreation workers because the field attracts many applicants. Overall employment is expected to grow about as fast as the average for all occupations through 2014 as people spend more time and money on recreation, have high disposable income and are concerned about health and fitness.










Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
 <b>Recreation Workers</b>	Conduct recreation activities with groups in public, private, or volunteer agencies or recreation facilities. Organize and promote activities, such as arts and crafts, sports, games, music, dramatics, social recreation, camping, and hobbies, taking into account the needs and interests of individuals members.	Entry: \$6.32 Average: \$9.36 Experienced: \$10.87	



Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
 <b>Lodging Managers</b>	Plan, direct, or coordinate medicine and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.	Entry: \$12.20 Average: \$16.93 Experienced: \$19.31	
<b>Food Service Managers</b>	Plan, direct, or coordinate activities of an organization or department that serves food and beverages.	Entry: \$12.17 Average: \$20.51 Experienced: \$24.68	
 <b>First-Line Supervisors/Managers of Personal Services</b>	Supervise and coordinate activities of personal service workers, such as supervisors of flight attendants, hairdressers, or caddies.	Entry: \$10.46 Average: \$16.03 Experienced: \$18.81	
 <b>Chefs and Head Cooks</b>	Direct the preparation, seasoning, and cooking of salads, soups, fish, meats, vegetables, desserts, or other foods. May plan and price menu items, order supplies, and keep records and accounts. May participate in cooking.	Entry: \$9.61 Average: \$15.17 Experienced: \$17.94	
<b>Slot Key Persons</b>	Coordinate/supervise functions of slot department workers to provide service to patrons. Handle and settle complaints of players. Verify and payoff jackpots. Reset slot machines after payoffs. Make minor repairs or adjustments, recommend removal of slot machines for repair.	Entry: \$9.60 Average: \$11.86 Experienced: \$12.98	
<b>First-Line Supervisors/Managers of Food Preparation</b>	Supervise workers engaged in preparing and serving food.	Entry: \$9.14 Average: \$13.27 Experienced: \$15.34	
<b>Bakers</b>	Mix and bake ingredients according to recipes to produce breads, rolls, cookies, cakes, pies, pastries, or other baked goods. Include pastry chefs in restaurants and hotels.	Entry: \$7.65 Average: \$10.43 Experienced: \$11.82	
<b>Cooks, Institution and Cafeteria</b>	Prepare and cook large quantities of food for institutions, such as schools, hospitals, or cafeterias.	Entry: \$7.20 Average: \$9.46 Experienced: \$10.59	
<b>Cooks, Restaurant</b>	Prepare, season, and cook soups, meats, vegetables, desserts, or other foodstuffs in restaurants. May order supplies, keep records and accounts, price items on menu, or plan menu.	Entry: \$7.04 Average: \$9.09 Experienced: \$10.13	
<b>Gaming Dealers</b>	Assist operators or customers in conducting games of chance.	Entry: \$6.09 Average: \$7.75 Experienced: \$8.58	











## Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Meat, Poultry, and Fish Cutters and Trimmers</b>	Use hand tools to perform routine cutting and trimming of meat, poultry, and fish.	Entry: \$10.94 Average: \$13.61 Experienced: \$14.95	
<b>Food Batchmakers</b>	Set up and operate equipment that mixes, blends, or cooks ingredients used in the manufacturing of food products.	Entry: \$8.87 Average: \$14.22 Experienced: \$16.89	
<b>Janitors and Cleaners, Except Maids and Housekeeping</b>	Keep buildings in clean and orderly condition. Perform heavy cleaning duties, such as cleaning floors, shampooing rugs, washing walls and glass, and removing rubbish.	Entry: \$7.15 Average: \$10.11 Experienced: \$11.59	
<b>Maids and Housekeeping Cleaners</b>	Perform any combination of light cleaning duties to maintain private households or commercial establishments, such as hotels, restaurants, and hospitals, in a clean and orderly manner.	Entry: \$6.82 Average: \$8.49 Experienced: \$9.32	
<b>Food Servers, Nonrestaurant</b>	Serve food to patrons outside of a restaurant environment, such as in hotels, hospital rooms, or cars.	Entry: \$6.74 Average: \$8.86 Experienced: \$9.92	
<b>Hotel, Motel, and Resort Desk Clerks</b>	Accommodate hotel, motel, and resort patrons by registering and assigning rooms to guests, issuing room keys, transmitting and receiving messages, keeping records of occupied rooms and guests' accounts, making and confirming reservations, and presenting statements to and collecting payments from departing guests.	Entry: \$6.44 Average: \$8.23 Experienced: \$9.13	
<b>Food Preparation Workers</b>	Perform a variety of food preparation duties other than cooking, such as preparing cold foods and shellfish, slicing meat, and brewing coffee or tea.	Entry: \$6.30 Average: \$8.16 Experienced: \$9.09	
<b>Cooks, Short Order</b>	Prepare and cook to order a variety of foods that require only a short preparation time. May take orders from customers and serve patrons at counters or tables.	Entry: \$6.12 Average: \$7.96 Experienced: \$8.87	
<b>Bartenders</b>	Mix and serve drinks to patrons, directly or through waitstaff.	Entry: \$6.08 Average: \$7.82 Experienced: \$8.69	





Occupation	Description	Hourly Wages	Outlook
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Dining Room and Cafeteria Attendants and Bartenders</b>	Facilitate food service. Clean tables, carry dirty dishes, replace soiled table linens; set tables; replenish supply of clean linens, silverware, glassware, and dishes; supply service bar with food, and serve water, butter, and coffee to patrons.	Entry: \$6.08 Average: \$7.71 Experienced: \$8.53	
<b>Counter Attendants, Cafeteria, Food Concession, and Coffee Shop</b>	Serve food to diners at counter or from a steam table.	Entry: \$6.07 Average: \$7.30 Experienced: \$7.93	
<b>Amusement and Recreation Attendants</b>	Perform variety of attending duties at amusement or recreation facility. May schedule use of recreation facilities, maintain and provide equipment to participants of sporting events or recreational pursuits, or operate amusement concessions and rides.	Entry: \$6.07 Average: \$7.49 Experienced: \$8.19	
<b>Cooks, Fast Food</b>	Prepare and cook food in a fast food restaurant with a limited menu. Duties of the cooks are limited to preparation of a few basic items and normally involve operating large-volume single-purpose cooking equipment.	Entry: \$6.06 Average: \$7.09 Experienced: \$7.60	
<b>Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop</b>	Welcome patrons, seat them at tables or in lounge, and help ensure quality of facilities and service.	Entry: \$6.06 Average: \$7.47 Experienced: \$8.17	
<b>Combined Food Preparation and Serving Workers, Including Fast Food</b>	Perform duties which combine both food preparation and food service.	Entry: \$6.05 Average: \$7.17 Experienced: \$7.73	
<b>Waiters and Waitresses</b>	Take orders and serve food and beverages to patrons at tables in dining establishment.	Entry: \$6.05 Average: \$7.08 Experienced: \$7.59	
<b>Dishwashers</b>	Clean dishes, kitchen, food preparation equipment, or utensils.	Entry: \$6.05 Average: \$7.10 Experienced: \$7.62	





## Human Services

Do you help friends with their personal problems?  
Do you care about people and want to help them?  
Have you cared for children or done babysitting?

Are you a good listener?  
Have you planned programs for  
school or community organizations?

*In the Human Services cluster, you would work with individuals and families to meet their personal needs.*

### National Employment Outlook




Employment of psychologists is expected to grow faster than average for all occupations through 2014, because of increased demand for psychological services in schools, hospitals, social service agencies, mental health centers, substance abuse treatment clinics, consulting firms, and private companies.

Overall employment of counselors is expected to grow faster than the average for all occupations through 2014. Opportunities generally should be very good because the number of job openings that arise should exceed the number of graduates of counseling programs. Demand is expected to be strong for substance abuse and behavioral disorder counselors because drug offenders are increasingly being sent to treatment programs rather than to jail. Mental health counselors will be needed to staff statewide networks that are being established to improve services for children and adolescents with serious emotional disturbances and for their family members.







Employment of social workers is expected

to increase faster than the average for all occupations through 2014. The rapidly growing elderly population and the aging baby boom generation will create greater demand for health and social services, resulting in particularly rapid job growth among gerontology social workers. Employment of school social workers also is expected to grow as expanded efforts to respond to rising student enrollments and continued emphasis on integrating disabled children into the general school population lead to more jobs.

The number of social and human service assistants is projected to grow much faster than the average for all occupations between 2004 and 2014—ranking the occupation among the most rapidly growing. There will be more competition for jobs in urban areas than in rural areas, but qualified applicants should have little difficulty finding employment. Faced with rapid growth in the demand for social and human services many employers increasingly rely on social and human service assistants to undertake greater responsibility for delivering services to clients.


Occupation	Description	Hourly Wages	Outlook
<b>Master's Degree or higher</b>			
 <b>Clinical, Counseling, and School Psychologists</b>	Diagnose and treat mental disorders; learning disabilities; and cognitive, behavioral, and emotional problems using individual, child, family, and group therapies. May design and implement behavior modification programs.	Entry: \$17.71 Average: \$27.79 Experienced: \$32.83	
<b>Bachelor's Degree</b>			
<b>Medical and Public Health Social Workers</b>	Provide persons, families, or vulnerable populations with the psychosocial support needed to cope with chronic, acute, or terminal illnesses, such as Alzheimer's, cancer, or AIDS. Services include advising family care givers, providing patient education and counseling, and making necessary referrals for other social services.	Entry: \$13.97 Average: \$18.96 Experienced: \$21.45	



Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
<b>Substance Abuse and Behavioral Disorder Counselors</b>	Counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families or groups or engage in prevention programs.	Entry: \$11.83 Average: \$16.34 Experienced: \$18.58	
<b>Mental Health Counselors</b>	Counsel with emphasis on prevention. Work with individuals and groups to promote optimum mental health. May help individuals deal with addictions and substance abuse; family, parenting, and marital problems; suicide; stress management; problems with self-esteem; and issues associated with aging and mental and emotional health.	Entry: \$11.39 Average: \$18.88 Experienced: \$22.62	
<b>Child, Family, and School Social Workers</b>	Provide social services and assistance to improve the social and psychological functioning of children and their families and to maximize the family well-being and the academic functioning of children. May assist single parents, arrange adoptions, and find foster homes for abandoned or abused children. In schools, they address such problems as teenage pregnancy, misbehavior, and truancy. May also advise teachers on how to deal with problem children.	Entry: \$10.70 Average: \$17.20 Experienced: \$20.46	
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Eligibility Interviewers, Government Programs</b>	Determine eligibility of persons applying to receive assistance from government programs and agency resources, such as welfare, unemployment benefits, social security, and public housing.	Entry: \$14.30 Average: \$18.24 Experienced: \$20.21	
<b>Social and Human Service Assistants</b>	Assist professionals from a wide variety of fields, such as psychology, rehabilitation, or social work, to provide client services, as well as support for families. May assist clients in identifying available benefits and social and community services and help clients obtain them. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or adult daycare.	Entry: \$7.37 Average: \$12.48 Experienced: \$15.04	
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Personal and Home Care Aides</b>	Massage customers for hygienic or remedial purposes.	Entry: \$7.70 Average: \$9.40 Experienced: \$10.24	



## Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Child Care Workers</b>	Attend to children at schools, businesses, private households, and child care institutions. Perform a variety of tasks, such as dressing, feeding, bathing, and overseeing play.	Entry: \$6.08 Average: \$7.94 Experienced: \$8.86	

## Information Technology

Do you enjoy working with computers?  
Have you created your own webpage?  
Is mathematics a favorite subject?

Are you organized and detail-oriented?  
Do you learn new  
computer programs quickly?

Information Technology (IT) is an area that is growing and always changing with new developments. In IT, you would be part of a cluster that continues to make an impact on society and individuals. You would have the opportunity to work in all types and sizes of businesses. Employees in IT work with computer hardware, software, multimedia, and network systems. In this cluster, you might design new computer equipment or computer games. Or you might make sure that the software or networks are working. In addition, you might have to make sure that people know how to use them. Or you might manage whole networks that link workers in all parts of the world.

### National Employment Outlook

Employment of computer and information systems managers is expected to grow faster than the average for all occupations through the year 2014. Technological advancements will boost the employment of computer-related workers; as a result, the demand for managers to direct these workers also will increase.

Computer software engineers are projected to be one of the fastest-growing occupations from 2004 to 2014. Employment is expected to increase much faster than the average for all occupations, as businesses and other organizations adopt and integrate new technologies and seek to maximize the efficiency of their computer systems.

Employment of computer support specialists is expected to increase faster than the average for all occupations through 2014, as organizations continue to adopt increasingly sophisticated technology and integrate it into their systems. Job growth will continue to be driven by the ongoing expansion of the computer system design and related services industry, which is projected to

remain one of the fastest-growing industries in the U.S. economy. Growth will not be as explosive as during the previous decade, however, as the information technology industry matures and some of these jobs are increasingly outsourced overseas.

Employment of systems administrators is expected to increase much faster than the average for all occupations as firms continue to invest heavily in securing computer networks. Companies are looking for workers who are knowledgeable about the function and administration of networks. Such employees have become increasingly hard to find as systems administration has moved from being a separate function within corporations to one that forms a crucial element of business in an increasingly high-technology economy.












Employment of computer systems analysts is expected to grow much faster than the average for all occupations through the year 2014 as organizations continue to adopt and integrate increasingly sophisticated technologies. Job



increases will be driven by very rapid growth in computer system design and related services, which is projected to be among the fastest growing industries in the U.S. economy.





Computer scientists and database administrators

should continue to enjoy favorable job prospects and are expected to be among the fastest growing occupations through 2014. As technology becomes more sophisticated and complex, employers demand a higher level of skill and expertise from their employees.

Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
<b>Computer and Information Systems Managers</b>	Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.	Entry: \$27.68 Average: \$41.71 Experienced: \$48.74	
 <b>Computer Software Engineers, Systems Software</b>	Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. Apply principles and techniques of computer science, engineering, and mathematical analysis.	Entry: \$22.91 Average: \$31.68 Experienced: \$36.06	
 <b>Computer Systems Analysts</b>	Analyze science, engineering, business, and all other data processing problems for application to electronic data processing systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations.	Entry: \$22.07 Average: \$30.63 Experienced: \$34.91	
 <b>Computer Software Engineers, Applications</b>	Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency.	Entry: \$21.66 Average: \$34.21 Experienced: \$40.49	
<b>Database Administrators</b>	Coordinate changes to computer databases, test and implement the database applying knowledge of database management systems.	Entry: \$18.61 Average: \$28.70 Experienced: \$33.74	
 <b>Computer Programmers</b>	Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites.	Entry: \$18.40 Average: \$26.80 Experienced: \$30.99	
<b>Network and Computer Systems Administrators</b>	Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet system or a segment of a network system. Maintain network hardware and software. Monitor network to ensure network availability to all system users and perform necessary maintenance to support network availability.	Entry: \$17.83 Average: \$27.66 Experienced: \$32.58	



## Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
<b>Network Systems and Data Communications Analysts</b>	Analyze, design, test, and evaluate network systems, such as local area networks (LAN), wide area networks (WAN), Internet, intranet, and other data communications systems. Perform network modeling, analysis, and planning. Research and recommend network and data communications hardware and software.	Entry: \$17.50 Average: \$27.85 Experienced: \$33.03	
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Computer Support Specialists</b>	Provide technical assistance to computer system users. Answer questions or resolve computer problems for clients in person, via telephone or from remote location. May provide assistance concerning the use of computer hardware and software, including printing, word processing, electronic mail, and operating systems.	Entry: \$12.80 Average: \$19.39 Experienced: \$22.68	
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Coin, Vending, and Amusement Machine Servicers and Repairers</b>	Install, service, adjust, or repair coin, vending, or amusement machines including video games, juke boxes, pinball machines, or slot machines.	Entry: \$11.49 Average: \$15.86 Experienced: \$18.05	
<b>Computer Operators</b>	Monitor and control electronic computer and peripheral electronic data processing equipment to process business, scientific, engineering, and other data according to operating instructions. May enter commands at a computer terminal and set controls on computer and peripheral devices. Monitor and respond to operating and error messages.	Entry: \$9.54 Average: \$14.10 Experienced: \$16.38	

## Law, Public Safety, and Security

Are you able to work under pressure?  
Can you work with various kinds of people?  
Do you like to help people?

Can you work in the face of danger?  
Are you good at winning arguments?  
Do you instruct friends on laws and regulations?

*If you are interested in working in this cluster, you have several options. One option is to guard the public by enforcing the law. Or you might provide fire protection and security. Another option is to provide legal services for people who commit crimes.*

### National Employment Outlook

Employment of lawyers is expected to grow about as fast as average for all occupations through 2014, primarily as a result of growth in the population and in the general level of business activities. Job growth will result

from increasing demand for legal services in such areas as health care, intellectual property, venture capital, energy, elder, antitrust, and environmental law. In addition, the wider availability and affordability of legal clinics



should result in increased use of legal services by middle-income people.

Paralegals and legal assistants are projected to grow much faster than average for all occupations through 2014. Employers are trying to reduce costs and increase the availability and efficiency of legal services by hiring paralegals to perform tasks formerly carried out by lawyers.

Employment of fire fighters is expected to grow faster than the average for all occupations through 2014. Most job growth will occur as volunteer fire fighting positions are converted to paid positions in growing suburban areas.






Increasing demand for correctional officers will stem from mandatory sentencing guidelines calling for longer sentences and reduced parole for inmates, and from expansion and new construction of corrections facilities. Employment is expected to grow more slowly than the average for all occupations through 2014.

Employment of police and detectives is expected to grow about as fast as the average








for all occupations through 2014. A more security-conscious society and concern about drug-related crimes should contribute to the increasing demand for police services. However, employment growth will be hindered by reductions in Federal hiring grants to local police departments and by expectations of low crime rates by the general public.

Opportunities for security guards and gaming surveillance officers should be favorable. Employment is expected to grow as fast as the average for all occupations through 2014 as concern about crime, vandalism, and terrorism continues to increase the need for security. Demand for guards also will grow as private security firms increasingly perform duties that were formerly handled by police officers.

Employment of dispatchers is expected to grow about as fast as the average for all occupations through 2014. Population growth and economic expansion are expected to spur employment growth for all types of dispatchers. The growing and aging population will increase demand for emergency services and stimulate employment growth of police, fire, and ambulance dispatchers.

Occupation	Description	Hourly Wages	Outlook
<b>Master's Degree or higher</b>			
 <b>Lawyers</b>	Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, and manage or advise clients on legal transactions. May specialize in a single area or may practice broadly in	Entry: \$23.84 Average: \$47.53 Experienced: \$59.37	
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>First-Line Supervisors/Managers of Police and Detectives</b>	Supervise and coordinate activities of members of police force.	Entry: \$21.21 Average: \$28.49 Experienced: \$32.12	
 <b>Police and Sheriff's Patrol Officers</b>	Maintain order, enforce laws and ordinances, and protect life and property in an assigned patrol district. Perform combination of following duties: patrol a specific area on foot or in a vehicle; direct traffic; issue traffic summonses; investigate accidents; apprehend and arrest suspects, or serve legal processes of courts.	Entry: \$14.14 Average: \$19.93 Experienced: \$22.82	

# Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Paralegals and Legal Assistants</b>	Assist lawyers by researching legal precedent, investigating facts, or preparing legal documents. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.	Entry: \$12.95 Average: \$18.20 Experienced: \$20.83	
<b>Fire Fighters</b>	Control and extinguish fires or respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster management.	Entry: \$9.20 Average: \$15.35 Experienced: \$18.43	
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
 <b>Correctional Officers and Jailers</b>	Guard inmates in penal or rehabilitative institution in accordance with established regulations and procedures. May guard prisoners in transit between jail, courtroom, prison, or other point.	Entry: \$13.72 Average: \$17.92 Experienced: \$20.02	
<b>Police, Fire, and Ambulance Dispatchers</b>	Receive complaints from public concerning crimes and police emergencies. Broadcast orders to police patrol units in vicinity of complaint to investigate. Operate radio, telephone, or computer equipment to receive reports of fires and medical emergencies and relay information or orders to proper officials.	Entry: \$11.72 Average: \$14.65 Experienced: \$16.12	
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Security Guards</b>	Guard, patrol, or monitor premises to prevent theft, violence, or infractions of rules.	Entry: \$7.28 Average: \$10.65 Experienced: \$12.34	
<b>Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers</b>	Monitor recreational areas, such as pools, beaches, or ski slopes to provide assistance and protection to participants.	Entry: \$6.04 Average: \$6.83 Experienced: \$7.23	

## Manufacturing, Installation, and Repair

Are you good at working with your hands?  
Can you explain to others how a machine works?  
Can you visualize how a machine works?

Do you set up or repair stereo equipment?  
Do you enjoy reading about the latest developments in electronics?

*In the Manufacturing, Installation, and Repair career cluster, you can choose one of several options. You might design a new product or determine how the product will be made. Another option is to make the product. The final option is to install and repair the product once it has been purchased.*



## National Employment Outlook

Employment of industrial production managers is expected to grow more slowly than average for all occupations through 2014, as overall employment in manufacturing declines. As more manufacturing plants move abroad and others are able to produce more with fewer people, there will be less need for industrial production managers. Also, new computerized machines are better able to control quality.

Engineering technicians are expected to increase about as fast as the average for all occupations through 2014. Competitive pressures will force companies to improve and update manufacturing facilities and product designs, resulting in more jobs for engineering technicians.





Employment of assemblers and fabricators is expected to grow more slowly than average through the year 2014, reflecting growth in mainly non-manufacturing industries and the employment services industry, which supplies temporary workers to the various industries. Also, in many other manufacturing industries, assemblers and fabricators have been negatively affected by increasing automation, improving productivity, and the shift of assembly to countries with lower labor costs.

Computer control programmers and operators should have good job opportunities, despite the











projected decline in employment. The demand will be negatively affected by the increasing use of software that automatically translates part and product designs into machine tool instructions. Due to the limited number of people entering training programs, employers are expected to continue to have difficulty finding workers with the necessary skills and knowledge.

Despite relatively slow employment growth, job opportunities for machinists should continue to be good. Employment is projected to grow more slowly than average for all occupations over the 2004-14 period because of rising productivity among these workers and strong foreign competition. Machinists will become more efficient as a result of the expanded use of and improvements in technologies and high-speed machining which allows fewer machinists to accomplish the same amount of work previously performed by more workers.












Pressures to improve productivity and hold down labor costs are leading many companies to invest more in automation, especially computer-controlled and robotically controlled welding machinery. Employment of welding, soldering, and brazing workers is expected to grow more slowly than average for all occupations over the 2004-14 period.

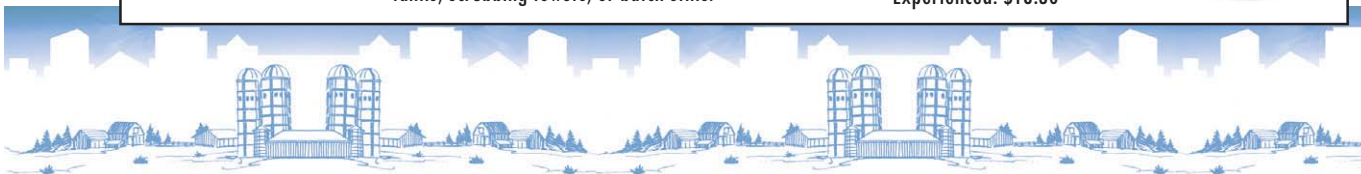
Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
 <b>Industrial Production Managers</b>	Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.	Entry: \$22.14 Average: \$35.44 Experienced: \$42.08	
<b>Purchasing Agents, Except Wholesale, Retail, and Farm Products</b>	Purchase machinery, equipment, tools, parts, supplies, or services necessary for the operation of an establishment. Purchase raw or semi-finished materials for manufacturing.	Entry: \$14.17 Average: \$21.99 Experienced: \$25.90	
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>First-Line Supervisors/Managers of Mechanics, Installers and Repairers</b>	Supervise and coordinate the activities of mechanics, installers, and repairers.	Entry: \$16.95 Average: \$25.30 Experienced: \$29.48	













Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Chemical Plant and System Operators</b>	Control or operate an entire chemical process or system of machines.	Entry: \$15.94 Average: \$21.37 Experienced: \$24.09	
<b>First-Line Supervisors/Managers of Production and Operating Workers</b>	Supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators.	Entry: \$15.43 Average: \$22.93 Experienced: \$26.68	
<b>Industrial Engineering Technicians</b>	Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May study and record time, motion, method, and speed involved in performance of production, maintenance, clerical, and other worker operations for such purposes as establishing standard production rates or improving efficiency.	Entry: \$15.31 Average: \$21.63 Experienced: \$24.80	
<b>Electrical and Electronics Repairers, Commercial and Industrial Equipment</b>	Repair, test, adjust, or install electronic equipment, such as industrial controls, transmitters, and antennas.	Entry: \$15.26 Average: \$20.32 Experienced: \$22.85	
<b>Electrical and Electronic Engineering Technicians</b>	Apply electrical and electronic theory and related knowledge, usually under the direction of engineering staff, to design, build, repair, calibrate, and modify electrical components, circuitry, controls, and machinery for subsequent evaluation and use by engineering staff in making engineering design decisions.	Entry: \$13.82 Average: \$20.50 Experienced: \$23.83	
 <b>Tool and Die Makers</b>	Analyze specifications, lay out metal stock, set up and operate machine tools, and fit and assemble parts to make and repair dies, cutting tools, jigs, fixtures, gauges, and machinists' hand tools.	Entry: \$13.81 Average: \$18.56 Experienced: \$20.94	
<b>Industrial Machinery Mechanics</b>	Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems.	Entry: \$13.72 Average: \$17.94 Experienced: \$20.05	
 <b>Maintenance Workers, Machinery</b>	Lubricate machinery, change parts, or perform other routine machinery maintenance.	Entry: \$13.29 Average: \$17.01 Experienced: \$18.87	













Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Millwrights</b>	Install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings.	Entry: \$12.65 Average: \$19.32 Experienced: \$22.66	
<b>Machinists</b>	Set up and operate a variety of machine tools to produce precision parts and instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, shop mathematics, metal properties, layout, and machining procedures.	Entry: \$11.53 Average: \$15.99 Experienced: \$18.23	
<b>Computer-Controlled Machine Tool Operators, Metal</b>	Operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic work pieces.	Entry: \$11.19 Average: \$14.67 Experienced: \$16.41	
 <b>Welders, Cutters, Solderers, and Brazers</b>	Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.	Entry: \$11.18 Average: \$14.75 Experienced: \$16.53	
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Rolling Machine Setters, Operators, and Tenders, Metal and Plastic</b>	Set up, operate, or tend machines to roll steel or plastic forming bends, beads, knurls, rolls, or plate or to flatten, temper, or reduce gauge of material.	Entry: \$13.38 Average: \$16.65 Experienced: \$18.28	
<b>Chemical Equipment Operators and Tenders</b>	Operate or tend equipment to control chemical changes or reactions in the processing of industrial or consumer products. Equipment used includes devulcanizers, batch stills, fermenting tanks, steam-jacketed kettles, and reactor vessels.	Entry: \$12.28 Average: \$16.34 Experienced: \$18.38	
 <b>Welding, Soldering, and Brazing Machine Setters, Operators and Tenders</b>	Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies.	Entry: \$12.11 Average: \$15.75 Experienced: \$17.57	
<b>Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders</b>	Set up, operate, or tend machines, such as glass forming machines, plodder machines, and tuber machines, to shape and form products, such as glassware, food, rubber, soap, brick, tile, clay, wax, tobacco, or cosmetics.	Entry: \$11.60 Average: \$14.82 Experienced: \$16.43	
<b>Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders.</b>	Set up, operate, or tend continuous flow or vat-type equipment; filter presses; shaker screens; centrifuges; condenser tubes; precipitating, fermenting, or evaporating tanks; scrubbing towers; or batch stills.	Entry: \$11.38 Average: \$15.99 Experienced: \$18.30	



Occupation	Description	Hourly Wages	Outlook
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Multiple Machine Tool Setters, Operators, and Tenders</b>	Set up, operate, or tend more than one type of cutting or forming machine tool or robot.	Entry: \$11.11 Average: \$14.01 Experienced: \$15.46	
<b>Structural Metal Fabricators and Fitters</b>	Fabricate, lay out, position, align, and fit parts of structural metal products.	Entry: \$11.05 Average: \$14.49 Experienced: \$16.23	
<b>Paper Goods Machine Setters, Operators, and Tender</b>	Set up, operate, or tend paper goods machines that perform a variety of functions, such as converting, sawing, corrugating, banding, wrapping, boxing, stitching, forming, or sealing paper or paperboard sheets into products.	Entry: \$10.98 Average: \$15.06 Experienced: \$17.11	
<b>Sheet Metal Workers</b>	Fabricate, assemble, install, and repair sheet metal products and equipment, such as ducts, control boxes, drainpipes, and furnace casings.	Entry: \$10.87 Average: \$18.92 Experienced: \$22.93	
<b>Mixing and Blending Machine Setters, Operators, and Tenders</b>	Set up, operate, or tend machines to mix or blend materials, such as chemicals, food products, tobacco, liquids, color pigments, or explosive ingredients.	Entry: \$10.85 Average: \$14.17 Experienced: \$15.83	
<b>Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic</b>	Set up, operate, or tend machines to saw, cut, shear, slit, punch, crimp, notch, bend, or straighten metal or plastic material.	Entry: \$10.61 Average: \$13.88 Experienced: \$15.50	
<b>Inspectors, Testers, Sorters, Samplers, and Weighers</b>	Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications.	Entry: \$10.23 Average: \$15.43 Experienced: \$18.03	
<b>Sawing Machine Setters, Operators, and Tenders, Wood</b>	Set up, operate, or tend wood sawing machines.	Entry: \$10.07 Average: \$13.91 Experienced: \$15.82	
<b>Woodworking Machine Setters, Operators, and Tender</b>	Set up, operate, or tend woodworking machines, such as drill presses, lathes, shapers, routers, sanders, planers, and wood nailing machines.	Entry: \$9.96 Average: \$12.58 Experienced: \$13.89	
<b>Cutting and Slicing Machine Setters, Operators, and Tenders</b>	Set up, operate, or tend machines that cut or slice materials, such as glass, stone, cork, rubber, tobacco, food, paper, or insulating material.	Entry: \$9.79 Average: \$13.82 Experienced: \$15.83	








Occupation	Description	Hourly Wages	Outlook
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Coating, Painting, and Spraying Machine Setters, Operators and Tenders</b>	Set up, operate, or tend machines to coat or paint any of a wide variety of products including food, glassware, cloth, ceramics, metal, plastic, paper, or wood, with lacquer, silver, copper, rubber, varnish, glaze, enamel, oil, or rust-proofing materials.	Entry: \$9.77 Average: \$13.74 Experienced: \$15.74	
<b>Painters, Transportation Equipment</b>	Operate or tend painting machines to paint surfaces of transportation equipment, such as automobiles, buses, trucks, trains, boats, and airplanes.	Entry: \$9.65 Average: \$14.07 Experienced: \$16.28	
<b>Team Assemblers</b>	Work as part of a team having responsibility for assembling an entire product or component of a product. Team assemblers can perform all tasks conducted by the team in the assembly process and rotate through all or most of them rather than being assigned to a specific task on a permanent basis.	Entry: \$9.53 Average: \$13.10 Experienced: \$14.88	
<b>Extruding and Drawing Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers</b>	Set up, operate, or tend machines to extrude or draw thermoplastic or metal materials into tubes, rods, hoses, wire, bars, or structural shapes.	Entry: \$9.39 Average: \$13.27 Experienced: \$15.21	
<b>Molding, Coremaking, and Casting Machine Setters, Operators, Tenders, Metal and Plastic</b>	Set up, operate, or tend metal or plastic molding, casting, or coremaking machines to mold or cast metal or thermoplastic parts or products.	Entry: \$9.34 Average: \$12.71 Experienced: \$14.40	
 <b>Sewing Machine Operators</b>	Operate or tend sewing machines to join, reinforce, decorate, or perform related sewing operations in the manufacture of garment or nongarment products.	Entry: \$7.27 Average: \$10.58 Experienced: \$12.24	
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Engine and Other Machine Assemblers</b>	Construct, assemble, or rebuild machines, such as engines, turbines, and similar equipment used in such industries as construction, extraction, textiles, and paper manufacturing.	Entry: \$13.32 Average: \$16.59 Experienced: \$18.22	
<b>Industrial Truck and Tractor Operators</b>	Operate industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, construction site, or similar location.	Entry: \$9.96 Average: \$13.35 Experienced: \$15.05	
<b>Machine Feeders and Offbearers</b>	Feed materials into or remove materials from machines or equipment that is automatic or tended by other workers.	Entry: \$6.06 Average: \$7.47 Experienced: \$8.17	





## Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Packaging and Filling Machine Operators and Tender</b>	Operate or tend machines to prepare industrial or consumer products for storage or shipment.	Entry: \$9.37 Average: \$13.49 Experienced: \$15.54	
<b>Conveyor Operators and Tenders</b>	Control or tend conveyors or conveyor systems that move materials or products to and from stockpiles, processing stations, departments, or vehicles. May control speed and routing of materials or products.	Entry: \$9.24 Average: \$13.21 Experienced: \$15.18	
<b>Electrical and Electronic Equipment Assemblers</b>	Assemble or modify electrical or electronic equipment, such as computers, test equipment telemetering systems, electric motors, and batteries.	Entry: \$8.48 Average: \$12.08 Experienced: \$13.88	
<b>Helpers--Production Workers</b>	Help production workers by performing duties of lesser skill. Duties include supplying or holding materials or tools, and cleaning work area and equipment.	Entry: \$8.16 Average: \$11.39 Experienced: \$13.01	
<b>Cleaners of Vehicles and Equipment</b>	Wash or otherwise clean vehicles, machinery, and other equipment. Use such materials as water, cleaning agents, brushes, cloths, and hoses.	Entry: \$6.73 Average: \$9.22 Experienced: \$10.48	

## Retail and Wholesale Sales and Service

Do you sell advertising space for the school yearbook or newspaper?  
Are you good at persuading people to do things?

Do you like to do public speaking or debating?  
Are you good at organizing your own time?  
Are you friendly and outgoing?

*If you are interested in working in the Marketing, Sales, and Service cluster, you would help businesses sell products. You might advertise and promote products so customers would want to buy them. Or you might sell products and services directly to customers. Or you might use the Internet to reach customers.*

### National Employment Outlook

Employment of advertising, marketing, promotions, public relations, and sales managers is expected to increase faster than the average for all occupations through 2014, spurred by intense domestic and global competition in products and services offered to consumers.

Property, real estate, and community association managers are projected to increase about as fast as average for all occupations through the year 2014. Job growth among onsite property managers in commercial real estate is expected to accompany the projected expansion of the real estate and rental and leasing industry.



Also contributing to growth is the increase of organized community or homeowner's associations that provide community services and oversee jointly owned common areas requiring professional management.







Employment of wholesale and retail buyers, except farm products, also is projected to grow more slowly than average. Mergers and acquisitions have caused buying departments to consolidate and larger retail stores are eliminating local buying departments and centralizing them at their headquarters.










Advertising sales agents are expected to grow about as fast as the average for all occupations through the year 2014 because of growth in population and advertising revenue. Rising demand for advertising sales agents also will stem from fast growth in cable systems and

from the expansion of firms into the growing Hispanic market.











Employment for retail salespersons is expected to grow about as fast as average for all occupations through the year 2014, reflecting rising retail sales stemming from a growing population. Opportunities for part-time work should be abundant, and demand will be strong for temporary workers during peak selling periods, such as the end-of-year holiday season.

Sales representatives, wholesale and manufacturing, are expected to grow about as fast as average for all occupations through the year 2014, primarily because of continued growth in the variety and number of goods to be sold. Prospective customers require sales workers to demonstrate or illustrate the particulars of a good or service.

Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
 <b>Sales Managers</b>	Direct the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.	Entry: \$23.59 Average: \$43.19 Experienced: \$53.00	
 <b>Marketing Managers</b>	Determine the demand for products and services offered by a firm and its competitors and identify potential customers. Develop pricing strategies with the goal of maximizing the firm's profits or share of the market while ensuring the firm's customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.	Entry: \$23.01 Average: \$40.35 Experienced: \$49.02	
<b>Property, Real Estate, and Community Association Manager</b>	Plan, organize, or coordinate the activities of a social service program or community outreach organization. Oversee the program or organization's budget and policies regarding participant involvement, program requirements, and benefits.	Entry: \$13.34 Average: \$26.44 Experienced: \$33.00	
<b>Wholesale and Retail Buyers, Except Farm Products</b>	Buy merchandise or commodities, other than farm products, for resale to consumers at the wholesale or retail level, including both durable and nondurable goods. Analyze past buying trends, sales records, price, and quality of merchandise to determine value and yield.	Entry: \$11.83 Average: \$18.98 Experienced: \$22.55	

Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>First-Line Supervisors/Managers of Non-Retail Sale</b>	Directly supervise and coordinate activities of sales workers other than retail sales workers. May perform duties, such as budgeting, accounting, and personnel work, in addition to supervisory duties.	Entry: \$17.55 Average: \$31.65 Experienced: \$38.71	
<b>Appraisers and Assessors of Real Estate</b>	Appraise real property to determine its fair value. May assess taxes in accordance with prescribed schedules.	Entry: \$13.42 Average: \$24.28 Experienced: \$29.70	
<b>Real Estate Sales Agents</b>	Rent, buy, or sell property for clients. Perform duties, such as study property listings, interview prospective clients, accompany clients to property site, discuss conditions of sale, and draw up real estate contracts.	Entry: \$12.65 Average: \$21.33 Experienced: \$25.68	
<b>First-Line Supervisors/Managers of Retail Sales Workers</b>	Directly supervise sales workers in a retail establishment or department. Duties may include management functions, such as purchasing, budgeting, accounting, and personnel work, in addition to supervisory duties.	Entry: \$10.79 Average: \$17.57 Experienced: \$20.96	
<b>Butchers and Meat Cutters</b>	Cut, trim, or prepare consumer-sized portions of meat for use or sale in retail establishments.	Entry: \$8.45 Average: \$11.53 Experienced: \$13.07	
<b>Hairdressers, Hairstylists, and Cosmetologists</b>	Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May also apply makeup, dress wigs, perform hair removal, and provide nail and skin care services.	Entry: \$6.96 Average: \$10.68 Experienced: \$12.53	
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Sales Representatives, Wholesale and Manufacturing</b>	Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.	Entry: \$12.52 Average: \$24.21 Experienced: \$30.06	
<b>Slaughterers and Meat Packers</b>	Work in slaughtering, meat packing, or wholesale establishments performing precision functions involving the preparation of meat. Work may include specialized slaughtering tasks, cutting standard or premium cuts of meat for marketing, making sausage, or wrapping meats.	Entry: \$9.97 Average: \$12.33 Experienced: \$13.51	
<b>Advertising Sales Agents</b>	Sell or solicit advertising, including graphic art, advertising space in publications, custom made signs, or TV and radio advertising time. May obtain leases for outdoor advertising sites or persuade retailer to use sales promotion display items.	Entry: \$9.45 Average: \$17.84 Experienced: \$22.04	




Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Parts Salespersons</b>	Sell spare and replacement parts and equipment in repair shop or parts store.	Entry: \$9.01 Average: \$14.14 Experienced: \$16.71	
<b>Floral Designers</b>	Design, cut, and arrange live, dried, or artificial flowers and foliage.	Entry: \$7.28 Average: \$9.27 Experienced: \$10.27	
 <b>Laundry and Dry-Cleaning Workers</b>	Operate or tend washing or dry-cleaning machines to wash or dry-clean industrial or household articles, such as cloth garments, suede, leather, furs, blankets, draperies, fine linens, rugs, and carpets.	Entry: \$7.21 Average: \$9.40 Experienced: \$10.48	
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Telemarketers</b>	Solicit orders for goods or services over the telephone.	Entry: \$7.12 Average: \$9.84 Experienced: \$11.19	
<b>Retail Salespersons</b>	Sell merchandise, such as furniture, motor vehicles, appliances, or apparel in a retail establishment.	Entry: \$6.94 Average: \$11.20 Experienced: \$13.34	
<b>Service Station Attendants</b>	Service automobiles, buses, trucks, boats, and other automotive or marine vehicles with fuel, lubricants, and accessories. Collect payment for services and supplies. May lubricate vehicle, change motor oil, install antifreeze, or replace lights or other accessories, such as windshield wiper blades or fan belts. May repair or replace tires.	Entry: \$6.71 Average: \$8.46 Experienced: \$9.35	
<b>Driver/Sales Workers</b>	Drive truck or other vehicle over established routes or within an established territory and sell goods, such as food products, including restaurant take-out items, or pick up and deliver items, such as laundry. May also take orders and collect payments.	Entry: \$6.67 Average: \$13.03 Experienced: \$16.21	
<b>Packers and Packagers, Hand</b>	Pack or package by hand a wide variety of products and materials.	Entry: \$6.23 Average: \$9.23 Experienced: \$10.73	
<b>Counter and Rental Clerks</b>	Receive orders for repairs, rentals, and services. May describe available options, compute cost, and accept payment.	Entry: \$6.18 Average: \$9.35 Experienced: \$10.93	





## Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Cashiers</b>	Receive and disburse money in establishments other than financial institutions. Usually involves use of electronic scanners, cash registers, or related equipment. Often involved in processing credit or debit card transactions and validating checks.	Entry: \$6.14 Average: \$7.78 Experienced: \$8.60	

## Science, Technology, Engineering, and Mathematics

Is science one of your favorite subjects?  
Do you prepare projects for science fairs?  
Do you enjoy reading science magazines?

Are you detail-oriented?  
Do you like to know how things work?  
Are you a “numbers person”?

*If you choose to work in the Science, Technology, Engineering, or Mathematics, you have several avenues. One avenue is to do scientific research in laboratories or the field. Another option is to be involved in the planning and design of products and systems. The last avenue is to provide support to the scientists, mathematicians, and engineers so they can do their work.*

### National Employment Outlook

Employment of engineering and natural sciences managers is expected to grow about as fast as the average for all occupations through the year 2014. Projected employment growth should be closely related to the growth of the occupations they supervise and of the industries in which they are found. In addition, many employers are finding it more efficient to contract engineering and science management services to outside companies and consultants, creating good opportunities for managers in management services and management, scientific, and technical consulting firms.

Overall engineering employment is expected to grow about as fast as the average for all occupations over the 2004-14 period. Engineers have traditionally been concentrated in slow-growing manufacturing industries, in which they will be needed to design, build, test, and improve manufactured products. However, increasing employment in faster growing service industries should generate most of the employment growth.

Civil engineers are expected to see average employment growth through 2014. Spurred by

general population growth and an increased emphasis on infrastructure security. Civil engineers will be needed to design and construct safe and higher capacity transportation, water supply, and pollution control systems, as well as large buildings and building complexes and to repair or replace existing roads, bridges, and other public structures.

Electrical engineers should have favorable employment opportunities. Employment is expected to increase about as fast as the average for all occupations through 2014. Although international competition and the use of engineering services performed in other countries may limit employment growth, strong demand for electrical devices such as giant electric power generators or wireless phone transmitters should boost growth.










Industrial engineers are expected to have employment growth about as fast as the average for all occupations through 2014. As firms seek to reduce costs and increase productivity, they increasingly will turn to industrial engineers to develop more efficient processes to reduce costs,




delays, and waste.

Mechanical engineers are projected to have an average rate of employment growth through 2014. Employment in manufacturing should increase as the demand for improved machinery and machine tools grows and as industrial machinery and processes become increasingly complex. Also, emerging technologies in biotechnology, materials science, and nanotechnology will create new job opportunities for mechanical engineers.

The increase in the number of biological technicians will be about as fast as average, as the growing number of agricultural and medicinal products developed with the use of biotechnology techniques will boost demand for these workers. Also, stronger competition among pharmaceutical companies and an aging population are expected to contribute to the need for innovative and improved drugs, further spurring demand for biological technicians.

Occupation	Description	Hourly Wages	Outlook
<b>Bachelor's Degree</b>			
<b>Engineering Managers</b>	Plan, direct, or coordinate activities in such fields as architecture and engineering or research and development in these fields.	Entry: \$30.41 Average: \$43.29 Experienced: \$49.73	
<b>Electrical Engineers</b>	Design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.	Entry: \$26.01 Average: \$35.24 Experienced: \$39.85	
 <b>Civil Engineers</b>	Perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, water and sewage systems, and waste disposal units.	Entry: \$22.50 Average: \$32.03 Experienced: \$36.80	
 <b>Industrial Engineers</b>	Design, develop, test, and evaluate integrated systems for managing industrial production processes including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination.	Entry: \$22.44 Average: \$29.67 Experienced: \$33.29	
 <b>Mechanical Engineers</b>	Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of such equipment as centralized heat, gas, water, and steam systems.	Entry: \$21.95 Average: \$30.86 Experienced: \$35.31	
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
<b>Biological Technicians</b>	Assist biological and medical scientists in laboratories. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs.	Entry: \$11.28 Average: \$16.38 Experienced: \$18.93	

## Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
<b>Weighers, Measurers, Checkers, and Samplers, Recordkeeping</b>	Weigh, measure, and check materials, supplies, and equipment for the purpose of keeping relevant records. Duties are primarily clerical by nature.	Entry: \$9.87 Average: \$13.25 Experienced: \$14.95	

## Transportation, Distribution, and Logistics

Do you have good eyesight and quick reflexes?  
Can you estimate distances accurately?  
Would you like to learn to fly an airplane?

Do you repair your family's and friends' vehicles?  
Do you read automotive or mechanical magazines?  
Have you driven a truck or tractor to do farm work?

If you are interested in working in this cluster, you have three avenues. One is to move people and products by road, air, rail, or water. You would drive or pilot different means of transportation. The second is to repair and maintain the vehicles, trains, planes, and ships to keep people and products moving. The third option is to work behind the scenes to make sure the products and people get to the right place on time.

### National Employment Outlook

Employment of dispatchers is expected to grow about as fast as the average for all occupations through 2014. Population growth and economic expansion are expected to spur employment growth for all types of dispatchers. The growing and aging population will increase demand for emergency services and stimulate employment growth of police, fire, and ambulance dispatchers.

As increasing pressure is put on firms to manufacture and deliver their goods more quickly and efficiently, the need for production, planning, and expediting clerks will grow, although the expected decline in overall employment in manufacturing will result in slower than average employment growth through 2014.

Employment of automotive body repairers is expected to grow as fast as average for all occupations through the year 2014. Demand for qualified body repairers will increase as the number of motor vehicles in operation continues to grow in line with the Nation's population. With each rise in the number of motor vehicles in use, the number of vehicles damaged in accidents also will grow.














Over the 2004-14 period, demand for automotive service technicians will grow as the number of vehicles in operation increases, reflecting continued growth in the number of multi-car families and the amount of freight transportation. Employment of automotive service technicians and mechanics and diesel service technicians is expected to increase as fast as the average through the year 2014.

Bus drivers overall is expected to increase about as fast as the average for all occupations through the year 2014, primarily to meet the transportation needs of the growing general population and the school-aged population.

Overall employment of truck drivers and driver/sales workers is expected to increase about as fast as the average for all occupations through the year 2014, due to growth in the economy and in the amount of freight carried by truck. Demand for long-distance drivers will remain strong because they can transport perishable and time-sensitive goods more effectively than alternate modes of transportation.
















Occupation	Description	Hourly Wages	Outlook
<b>Postsecondary Education</b> (Long-term on-the-job training or work experience in a related occupation)			
 <b>Transportation, Storage, and Distribution Managers</b>	Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with governmental policies and regulations. Include logistics managers.	Entry: \$22.26 Average: \$35.99 Experienced: \$42.86	
<b>First-Line Supervisors/Managers of Transportation</b>	Directly supervise and coordinate activities of transportation and material-moving machine and vehicle operators and helpers.	Entry: \$15.21 Average: \$23.20 Experienced: \$27.19	
<b>Mobile Heavy Equipment Mechanics, Except Engines</b>	Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining.	Entry: \$14.71 Average: \$19.03 Experienced: \$21.19	
<b>First-Line Supervisors/Managers of Helpers, Laborer</b>	Supervise and coordinate the activities of helpers, laborers, or material movers.	Entry: \$13.30 Average: \$19.35 Experienced: \$22.38	
<b>Bus and Truck Mechanics and Diesel Engine Specialist</b>	Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines.	Entry: \$11.98 Average: \$16.49 Experienced: \$18.74	
<b>Farm Equipment Mechanics</b>	Diagnose, adjust, repair, or overhaul farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.	Entry: \$10.96 Average: \$14.99 Experienced: \$17.00	
 <b>Automotive Body and Related Repairers</b>	Repair and refinish automotive vehicle bodies and straighten vehicle frames.	Entry: \$9.87 Average: \$15.50 Experienced: \$18.32	
 <b>Automotive Service Technicians and Mechanics</b>	Diagnose, adjust, repair, or overhaul automotive vehicles.	Entry: \$9.82 Average: \$15.70 Experienced: \$18.63	
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
 <b>Truck Drivers, Heavy and Tractor-Trailer</b>	Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 GVW, to transport and deliver goods, livestock, or materials in liquid, loose, or packaged form. May be required to unload truck. Requires commercial drivers' license.	Entry: \$10.73 Average: \$15.77 Experienced: \$18.28	





# Occupations Guide

Occupation	Description	Hourly Wages	Outlook
<b>High School Diploma or equivalent</b> (Moderate-term on-the-job training)			
<b>Dispatchers, Except Police, Fire, and Ambulance</b>	Schedule and dispatch workers, work crews, equipment, or service vehicles for conveyance of materials, freight, or passengers or for normal installation, service, or emergency repairs rendered outside the place of business.	Entry: \$10.23 Average: \$15.78 Experienced: \$18.56	
 <b>Bus Drivers, Transit and Intercity</b>	Drive bus or motor coach, including regular route operations, charters, and private carriage.	Entry: \$7.97 Average: \$11.63 Experienced: \$13.46	
<b>Less than High School Diploma</b> (Short-term on-the-job training)			
 <b>Postal Service Mail Carriers</b>	Sort mail for delivery. Deliver mail on established route by vehicle or on foot.	Entry: \$16.66 Average: \$21.78 Experienced: \$24.33	
<b>Postal Service Mail Sorters, Processors, and Processors</b>	Prepare incoming and outgoing mail for distribution. Examine, sort, and route mail by State, type of mail, or other scheme. Load, operate, and occasionally adjust and repair mail processing, sorting, and canceling machinery. Keep records of shipments, pouches, and sacks; and other duties related to mail handling within the postal service. Must complete a competitive exam.	Entry: \$14.32 Average: \$20.14 Experienced: \$23.06	
 <b>Production, Planning, and Expediting Clerks</b>	Coordinate and expedite the flow of work and materials within or between departments of an establishment according to production schedule.	Entry: \$11.89 Average: \$17.52 Experienced: \$20.33	
<b>Truck Drivers, Light or Delivery Services</b>	Drive a truck or van with a capacity of under 26,000 GVW, primarily to deliver or pick up merchandise or to deliver packages within a specified area. May require use of automatic routing or location software. May load and unload truck.	Entry: \$7.85 Average: \$12.86 Experienced: \$15.36	
<b>Tire Repairers and Changers</b>	Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining.	Entry: \$7.32 Average: \$10.76 Experienced: \$12.48	
<b>Taxi Drivers and Chauffeurs</b>	Drive automobiles, vans, or limousines to transport passengers. May occasionally carry cargo.	Entry: \$7.10 Average: \$9.08 Experienced: \$10.06	
<b>Bus Drivers, School</b>	Transport students or special clients, such as the elderly or persons with disabilities. Ensure adherence to safety rules. May assist passengers in boarding or exiting.	Entry: \$6.32 Average: \$12.13 Experienced: \$15.04	